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ALABAMA HAZARDOUS WASTES MANAGEMENT AND MINIMIZATION ACT
(AHWMMA)
Compliance Evaluation Inspection (CEI) Report

1) **Author of Report**

L. J. Knickerbocker
Environmental Scientist, Senior
Compliance and Enforcement, Industrial Hazardous Waste Branch
Alabama Department of Environmental Management (ADEM)
1400 Coliseum Boulevard
Montgomery, AL 36110

2) **Facility Information**

Zilkha Biomass Selma LLC
1256 County Road 78
Selma, Dallas County, Alabama 36703

EPA ID Number: ALR000057372
NAICS Code: 321999

Telephone: (334) 875-8890

3) **Responsible Officials**

Mr. Charles Daw, Jr., Plant Manager Selma
Email: [HYPERLINK "mailto:cdaw@zilkhabiomass.com"]
Website: [HYPERLINK "http://www.zilkha.com/zbs"]

Telephone: (334) 875-8891

4) **Inspection Participants**

Mr. Daw
Mr. Kent Shields, Director, Civil and Environmental Engineering (Houston, Texas)
Ms. Paula Whiting, Environmental Engineer
Hazardous Waste Enforcement and Compliance Section
Enforcement and Compliance Branch
Resource Conservation and Restoration Division
US Environmental Protection Agency - Region IV
Ms. L. J. Knickerbocker

5) **Date of Inspection**

February 25, 2016

6) **Applicable Regulations**

ADEM Administrative Code Division 335-14, Hazardous Waste Program Regulations.

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7) **Purpose of Inspection**

The purpose of the inspection was to determine the facility's compliance with all applicable requirements of Division 14 of the ADEM Administrative Code.

8) **Facility Description**

Zilkha Biomass Selma LLC (hereinafter "ZBS") manufactures the Zilkha Black® Pellet, a water-resistant, industrial-grade fuel pellet composed of compressed pre-dried wood- a product similar to pelletized charcoal. See Photograph #1 for an aerial view of the site.

In its most recent notification of regulated waste activity (ADEM Form 8700-12, dated October 12, 2015), ZBS identified itself as a non-generator of hazardous waste.

9) **Observations**

On February 25, 2016, Ms. Whiting and I (hereinafter "we" or "us") arrived at the site at 9:50 a.m. and proceeded to the security gate. From there, we were directed to the front office, where we were greeted by Mr. Daw and Mr. Shields. We introduced ourselves and explained the purpose of our visit. We proceeded to Mr. Daw's office, where we held the opening meeting. Mr. Daw and Mr. Shields provided background information about the site and the following overview of its operations:

> The site was originally established as "Dixie Pellets"; that company went out of business in 2009. In 2010, ZBS acquired the site, including a tank containing several hundred gallons of unused sodium hydroxide. Employees noticed that the tank holding the material had serious corrosion issues in 2014; at that time, ZBS notified as a large quantity generator under the assumption that the material was no longer useable and would have to be disposed. Subsequently, Mr. Shields made the determination that the material could still be used for its intended purpose, so it was removed from the tank and placed in totes for continued use. On October 16, 2015, ZBS re-notified to change its status to non-generator.
>
> The facility occupies five acres of a 37-acre site and consists of a wood yard, two hammer mills, a drying area, a thermal treatment unit, and the pelletizing unit. Vegetative bulk feedstock or raw material (e.g., sawdust, chips, shavings, tree-tops, limbs and thinnings) is stored at the wood yard. The feedstock is processed through the first hammer mill to reduce it to a particle size of 9.5 millimeters or less; any pieces that fail the initial screening are returned to the hammer mill. The wood chips are dried to a moisture content of 9% or less. After they are dried, the chips are fed into the thermal treatment unit (essentially a "steam cooker", according to Mr. Shields) to break down the cellulose and lignins. Next, the wood is sent through another hammer mill to reduce them to a uniform particle size again (less than 2 millimeters). In the final step, the particles are compressed into pellets of a uniform size, moisture level, and ash content, producing a nearly dustless, water-resistant, lightweight, and compact fuel source for industrial boiler systems.

Commented [SC1]: Wood chips are now wood???

Commented [SC2]: The object personal pronoun "them" does not agree with the subject "wood", which is singular.

ZBS currently operates 24 hours per day, seven days per week and has 70 full-time employees. According to Mr. Daw, no hazardous wastes are generated at the site.

Following the opening meeting, Mr. Shields accompanied us on the walk-through inspection.

During the walk-through inspection, we noted the following:

Wood Yard and Hammer Mill

Bulk feedstock is stored in wood yard and fed by a conveyor system to the hammer mill; the mill reduces all the wood to a chip size of less than 9.5 millimeters. Any pieces that cannot pass through the final screen are returned to the hammer mill. No hazardous waste is generated in this area, and no issues were noted.

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Drying Unit

From the hammer mill, the wood chips are fed into one of two large rotary drying ovens and heated to 1,000 degrees Fahrenheit (°F) to reduce the moisture content of the chips prior to the next step in the production process. No hazardous waste is generated in this area and no issues were noted.

Thermal Treatment Unit

The wood chips are heated with steam to break down cellulose and lignins; this homogenizes the product and ensures a uniform burn rate. Two additional units are associated with the thermal treatment unit: a "scrubber" and a wet electrostatic precipitation unit (" WESP").

While no chemicals are used in the thermal treatment unit according to ZBS' literature, the scrubber uses sodium hypochlorite (referred to as "caustic" by facility employees). A tank adjacent to the scrubber was used by Dixie Pellets to hold the caustic; since it is severely corroded, ZBS personnel transferred the product into several totes for continued use. Mr. Shields told us that the tank was slated to be removed at some point in the future. During operation, there appears to be a steady release of brownish liquid from the scrubber. The concrete pad beneath the scrubber was severely degraded; we could not determine if the degradation was caused by the on-going release or to a prior release of caustic from the corroded tank. Mr. Shields stated that ZBS had not made a hazardous waste determination on the released liquid. He was able to tell us that the WESP generates a nonhazardous sludge that is essentially wet sawdust and dirt. See Photograph #2 through Photograph #7.

Milling and Pelletizing

Once thermal treatment is completed, the wood is conveyed to a second hammer mill to reduce the particles to a very uniform size (less than 2 millimeters), then compressed and extruded as cylindrical pellets. No hazardous wastes are generated in this area and no issues were noted.

Maintenance area

Vehicle and equipment repairs are conducted within the garage, while supplies for (and waste from) all repair activities at the site are stored in the warehouse and five storage trailers that make up the maintenance area.

In the warehouse, we saw a 385-gallon polyethylene used oil container. It was marked with the words "Used Oil", but the lid was open. The container and the concrete floor around it were stained with spilled oil; oil dry was spread around the container to absorb the spill, but it had not been removed. On the floor beside the large container, we also saw a 5-gallon plastic bucket of used oil; it was open, was not marked in any way, and was about half-filled with used oil. Elsewhere in the warehouse, we saw a fiber container that held about 20 spent fluorescent lamps and several high-intensity discharge lamps. Some of the lamps were broken, the container was not visibly marked, and was not closed or dated. Mr. Shields did not know how long the lamps had been accumulated at the site. See Photograph #8 through Photograph #10.

In one of the storage trailers, we saw five cans of paint that were stained with paint and were not tightly closed. Mr. Shields did not know if they still held useable paint. See Photograph #11.

Records Review

During the records review, we requested the following documents and records:

- Hazardous waste determination;
- Waste preapproval documents
- Documentation of the quantity of hazardous waste generated each month;

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- Documentation of waste shipments;
- Documentation of used oil disposal;

ZBS was not able to provide any documentation regarding its generation of used oil, spent lighting, or other wastes. In an email dated February 26, 2015, ZBS provided two "Non-hazardous Manifests" from Metro Environmental (now named Universal Environmental Services), EPA identification number ALR000002485. The records provided indicate that Metro Environmental collected 300 gallons of used oil on September 9, 2015 and an additional 200 gallons on December 23, 2015.

10) Summary

The following potential areas of noncompliance were noted at the time of the inspection:

- There was a significant release of liquid from the scrubber unit; ZBS has not made a hazardous waste determination on that liquid.
- ZBS did not keep closed to containers holding used oil
- ZBS did not mark one of those containers with the words "Used Oil"
- ZBS has not made a hazardous waste determination on its spent lighting waste
- ZBS has not notified the Department of its used oil generation.

Following the inspection, we met with Mr. Daw for a closing meeting. We reviewed our observations, and gave him the opportunity to ask questions. At the conclusion of the closing conference, I prepared a *Preliminary Inspection Report* describing our findings. I left the top copy of the form with Mr. Daw and we departed the site at 1:00 p.m.

11) Signed

Compliance and Enforcement Section
Industrial Hazardous Waste Branch
Land Division

April 7, 2016
Date

12) Concurrence

Clethes Stallworth, Chief
Compliance and Enforcement Section
Industrial Hazardous Waste Branch
Land Division

April 7, 2016
Date

Attachment - Photo Log

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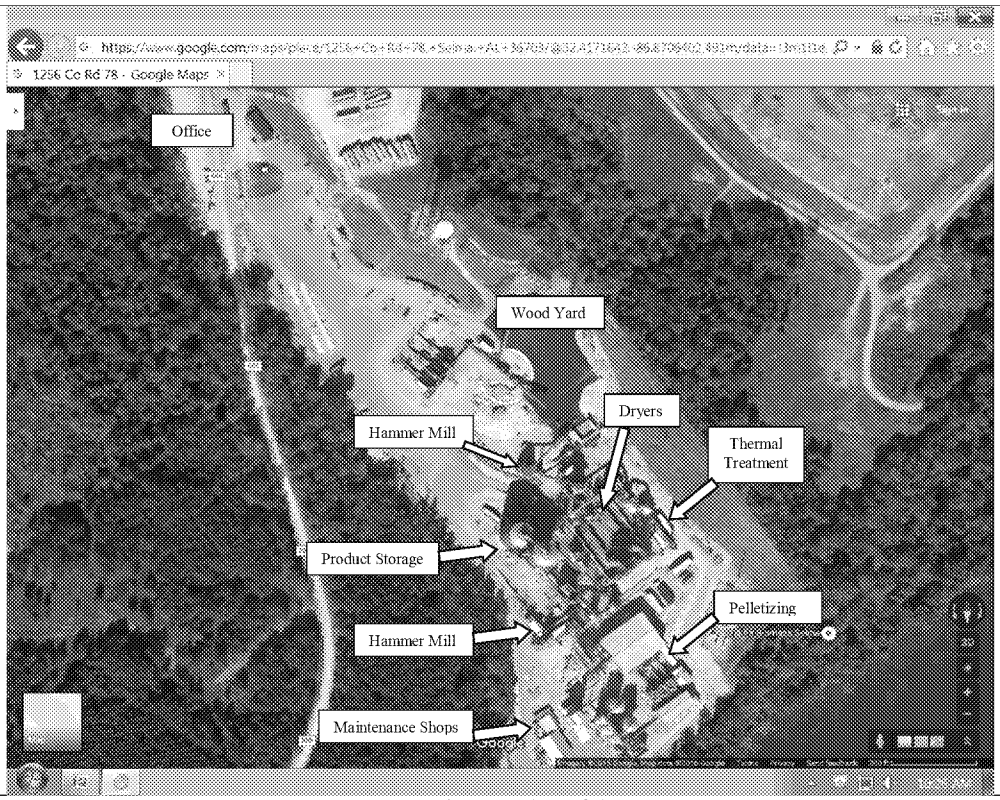
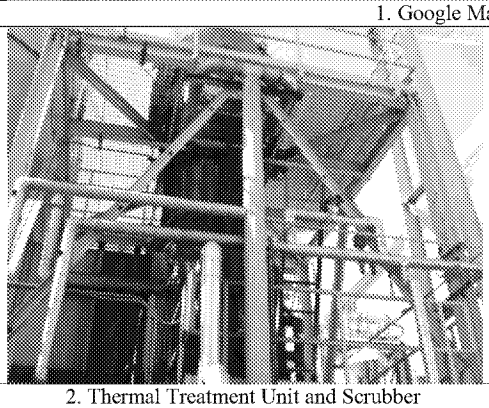
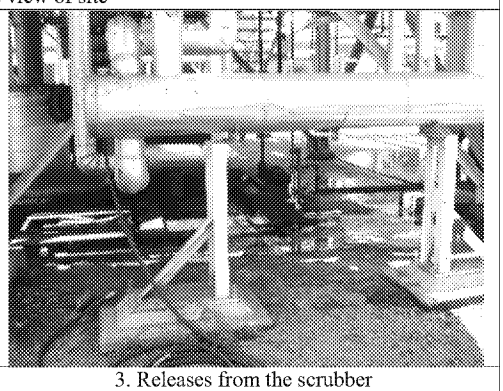
ATTACHMENT – ZILKHA BIOMASS SELMA LLC PHOTO LOG



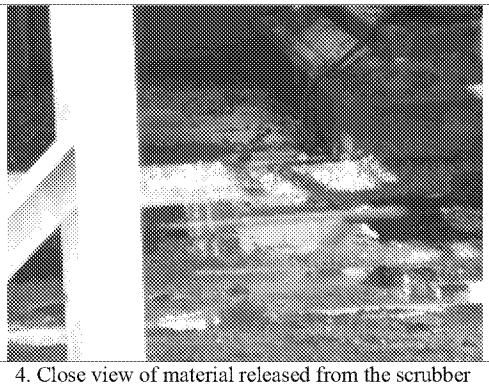
1. Google Maps view of site



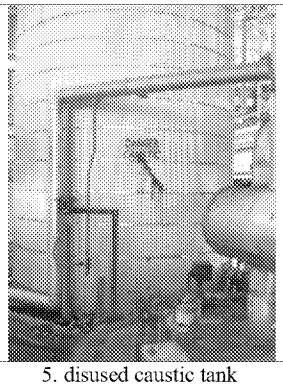
2. Thermal Treatment Unit and Scrubber



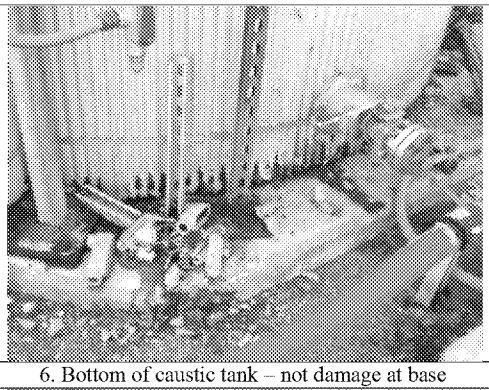
3. Releases from the scrubber



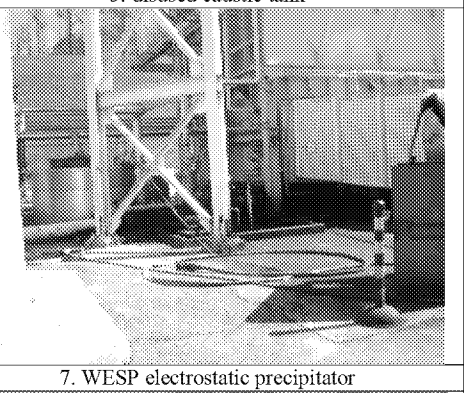
4. Close view of material released from the scrubber



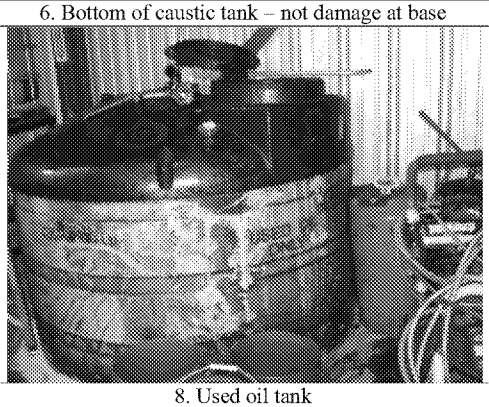
5. disused caustic tank



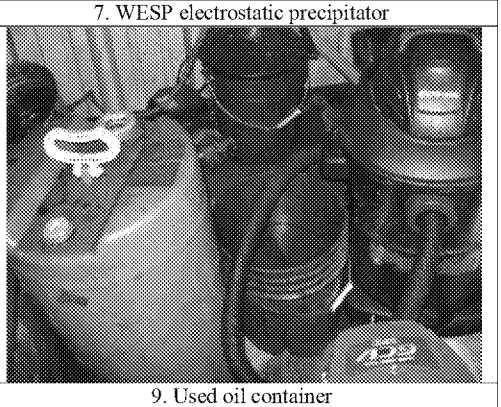
6. Bottom of caustic tank – not damage at base



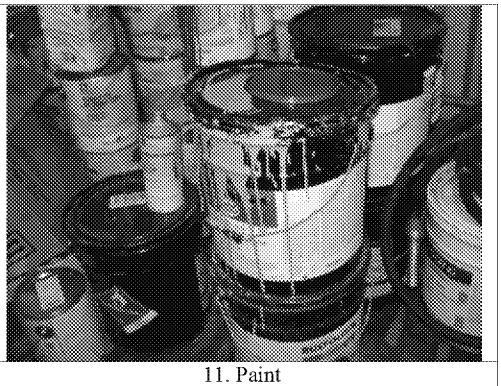
7. WESP electrostatic precipitator



8. Used oil tank



9. Used oil container

	
10. Discarded fluorescent lamps	11. Paint